Replacement for Standard LCDs

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Many circuits published in *Elektor Electronics* use LC displays. These displays are usually only intended to show text. Such displays are much less expensive than LCDs that can display complex graphic images.

The legibility of most LC displays is without question good with normal lighting and proper contrast adjustment. Unfortunately, it degrades with reduced ambient light. Some LCDs have a ‘backlight’, which is a light source located behind the actual screen. When a backlight is used, the entire screen lights up, except where pixels are to be made visible. These locations are dark.

The presentation of the display can be improved by having the letters light up while the rest of the screen remains dark. This could be achieved using software, but due to the way the displays are made, it’s not possible to darken the entire screen. There is a type of display that does not have this problem, which is called a ‘VFD’. Such displays show bright pixels against a dark background, instead of making the pixels dark. However, this type of display has the disadvantage that it requires a high voltage to illuminate the pixels.

Fortunately, the Japanese firm Noritake has recently launched a series of VFD modules (the CU series) that is compatible with standard LC displays. These displays have converters to generate the high voltage needed to illuminate the pixels, and the programming interface and connector are exactly the same as those of standard LCD modules. This means that in any project that uses a standard LCD, the display can be replaced by a CU-series VFD from this manufacturer.

Of course, you must take into account that these modules draw more current than standard LCD modules. This is hardly surprising, since they generate their own light. For a standard display with 16 × 2 characters, the maximum current consumption is approximately 150 mA, while the current consumption of a 4 × 40 type can be as much as 550 mA!

If you are interested in these new displays, you might want to take a look at the manufacturer’s website at

www.noritake-itron.com.

These displays may not be readily available, but you can certainly enquire at your local electronics shop. In Europe, Noritake has offices in the UK and Germany.

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